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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,224	12/08/2005	Michel Desroses	F-8553	7215
28107 7590 10/18/2007 JORDAN AND HAMBURG LLP 122 EAST 42ND STREET SUITE 4000 NEW YORK, NY 10168			EXAMINER DUNLAP, JONATHAN M	
			ART UNIT 2855	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/522,224

Applicant(s)

DESROSES ET AL.

Examiner

Jonathan Dunlap

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/24/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date January 24, 2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. **Claim 11-12 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reinbold et al. (U.S. Patent 6,033,370)** in view of **French et al. (U.S. Patent 4,761,005)**.

Considering **claim 11**, Reinbold discloses:

- A first sensor **160** integral with the target **150** for detecting whether the target **150** has been impacted by the mobile body and producing an electric image of the impact (**Figure 10b; Column 10, lines 26-33**); and
- The first sensor **160** comprising a variable capacitor (**Figures 2b and 10b; Column 3, lines 41-59**).

The invention by Reinbold fails to disclose a second sensor for detecting whether the mobile body grazes the target or strikes it that comprises a variable induction coil housed in the target which is reactive to an element associated with the mobile body having properties permeable to a magnetic field of the variable inductor.

2. However, French teaches a second sensor **116** integral with the mobile body for detecting whether the mobile body grazes the target or strikes it that comprises a variable induction coil **110** (**Figures 9-10; Column 5, lines 45-68; Column 11, lines 4-18**).

Considering **claim 12**, Reinbold fails to disclose

- The target comprises a device for creating a magnetic field in a vicinity thereof;
- The mobile body comprises a material highly permeable to the magnetic field; and
- The apparatus further comprises a magnetic field detector for detecting magnetic properties of the target.

3. However, French teaches:

- The target **14** comprises means for creating a magnetic field in its vicinity (**Figure 1 and 9; Column 5, lines 30-37**);
- The mobile body **126** comprises a material **128** highly permeable to the magnetic field (**Figure 11; Column 11, lines 53-60, 65-68; Column 12, lines 1-4**); and
- The apparatus further comprises a magnetic field detector for detecting magnetic properties of the target (**Figure 12; Column 11, lines 19-28; Column 12, lines 5-25**).

Considering **claim 15**, Reinbold fails to disclose that the magnetic field detector comprises:

- An induction coil;
- An oscillating circuit;
- A converter;
- A comparator; and

- The magnetic field detector detecting variation of the magnetic properties of the target induced by the material which is permeable to the magnetic field.

4. However, French teaches:

- An induction coil **110 (Figure 9)**;
- An oscillating circuit (**Column 11, lines 39-42**);
- A converter **77 (Figure 6A; Column 12, lines 35-60)**;
- A comparator **72 (Figure 6A; Column 12, lines 35-60)**; and
- The magnetic field detector detecting variation of the magnetic properties of the target induced by a material which is permeable to the magnetic field (**Column 11, lines 19-28**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the variable inductor into the target as taught by French in the invention by Reinbold. The motivation for doing so is found in the teachings of French, "by incorporating both the noncontact embodiment and the contact embodiment into the same vest, the system can be made to both indicate, measure and evaluate the nature of contact made, discriminate between contacting hits which are made with the designated hitting areas of the other fighter's body, and those which are made with other parts of the attacking fighter's body" (**Column 13, lines 19-26**).

5. **Claims 13-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reinbold et al. (U.S. Patent 6,033,370)** in view of **French et al. (U.S. Patent 4,761,005)** as applied to claim 11 above, and further in view of **Le Thiec (U.S. Patent 5,065,093)**.

Considering **claim 13**, French discloses that the material **128** is highly permeable to the magnetic field and comprises at least one ferromagnetic alloy (**Figure 11; Column 11, lines 53-68; Column 12, lines 1-4**).

The invention by Reinbold, as modified by French, fails to disclose that the highly permeable material that comprises at least one ferromagnetic alloy which has a high magnetic permeability and a low coercive force and has a permeability of 60,000 to 240,000.

6. However, Le Thiec teaches:

Considering **claim 13**, that the material highly permeable to the magnetic field comprises at least one ferromagnetic alloy having a high magnetic permeability and a low coercive force and has a permeability of 60,000 to 240,000 (**Column 10, lines 9-15**).

Considering **claim 14**, wherein the material permeable to the magnetic field comprises a Mumetal® or Permalloy® alloy (**Column 10, lines 9-15**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a Mumetal® or Permalloy® alloy with a high magnetic permeability with a low coercive force and a permeability of 60,000 and 240,000 as taught by Le Thiec in the invention by Reinbold, as modified by French. The

motivation for doing so is that the highly permeable material is needed to increase the magnetic field sensor's sensitivity as taught by Le Thiec (**Le Thiec; Column 1, lines 21-68; Column 2, lines 16-20**).

7. **Claims 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reinbold et al. (U.S. Patent 6,033,370)** in view of **French et al. (U.S. Patent 4,761,005)** as applied to claim 11 above, and further in view of **Crouse (IBM 1,363,778)**.

Considering **claims 16-17**, Reinbold discloses that upon impact, the deformable layers of the first sensor cause a conduction change in the layers of the variable capacitor (**Figure 2b; Column 3, lines 41-59**).

The invention by Reinbold, as modified by French, fails to disclose that the first sensor comprises a first and second capacitive matrix.

8. However, Crouse teaches:

Considering **claim 16**, wherein the first sensor comprises at least one matrix including capacitors, the at least one matrix being partially deformable under the influence of an impact thereby to vary conductance of a circuit including the capacitors (**Page 1, lines 14-29**).

Considering **claim 17**, wherein the at least one matrix comprises:

- A first matrix including a first plurality of interconnected plates of a conductor metal; and

- A second matrix including a second plurality of interconnected plates of a conductor metal, respective plates of the first plurality of plates facing respective plates of the second plurality of plates and the deformation of the matrixes under the influence of an impact varying distance between respective pairs of the facing plates thereby to vary conductance of a circuit including the pairs of the facing plates (**Page 1, lines 14-29**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a first sensor comprising a first and second capacitive matrix, wherein the impact by the moving body causes a variation in capacitance between the first and second matrices as taught by Crouse in the invention by Reinbold, as modified by French. The motivation for doing so is that through the use of the capacitive matrices, "changes of as little as one picofarad may be sensed easily" (**Crouse, Page 1, lines 90-95**).

9. **Claim 18-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reinbold et al. (U.S. Patent 6,033,370)** in view of **French et al. (U.S. Patent 4,761,005)** and **Cook (U.S. Patent 6,056,674)**

Considering **claim 18**, Reinbold discloses providing a first sensor **160** comprising a variable capacitor integral with the target **150** for detecting whether the target **150** has been impacted by the mobile body and producing an electric image of the impact, wherein impact of the mobile body on the capacitor varies capacity of the capacitor (**Figures 2b and 10b; Column 3, lines 41-59; Column 10, lines 26-33**).



The invention by Reinbold fails to disclose creating a magnetic field on the target and a second sensor for detecting whether the mobile body grazes the target or strikes it that comprises a variable induction coil housed in the target which is reactive to an element associated with the mobile body having properties permeable to a magnetic field of the variable inductor.

10. However, French teaches:

- Creating a magnetic field on the target **14 (Figure 1 and 9; Column 5, lines 30-37; Column 11, lines 5-42);** and
- Providing a second sensor **116** comprising a variable induction coil **110** integral with the mobile body for detecting whether the mobile body grazes the target or strikes it, wherein variation of strength of the magnetic field varies inductance of the induction coil **(Figures 9-10; Column 5, lines 45-68; Column 11, lines 4-18).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the variable inductor into the target as taught by French in the invention by Reinbold. The motivation for doing so is found in the teachings of French, "by incorporating both the noncontact embodiment and the contact embodiment into the same vest, the system can be made to both indicate, measure and evaluate the nature of contact made, discriminate between contacting hits which are made with the designated hitting areas of the other fighter's body, and those which are made with other parts of the attacking fighter's body" **(Column 13, lines 19-26).**

The invention by Reinbold, as modified by French, fails to disclose that the capacitive and inductive variance information is stored in a 16-bit register and a 1-bit latch respectively and that that the computer processes said data to produce information for assisting refereeing of the combative sport.

11. However, Cook teaches:

Considering **claim 18**, a method for detecting nature of an impact of a blow struck by a mobile body on a mobile or stationary target, comprising:

- Memorizing the capacity variation in a 16 bit register **22**; and
- Memorizing information about the inductance variation by one bit in a low level latch if the mobile body is present and in a high level latch if the mobile body is absent (**Figure 1; Column 1, lines 26-38; Column 3, lines 25-38, lines 44-67**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further store the sensed information in a memory and/or register of a CPU as taught by Cook in the invention by Reinbold, as modified by French. The motivation for doing so would be to increase accuracy by allowing for the storage of additional bits or to increase speed by integrating the registers within the processing unit.

Considering **claim 19**, the invention by Reinbold, as modified by French, fails to disclose transmitting respective data of the capacity variation and of the inductance variation in the form of signals by means of radio waves to a receiver connected to a computer.

12. However, Cook teaches transmitting respective data of the capacity variation and of the inductance variation in the form of signals by means of radio waves to a receiver connected to a computer (**Column 6, lines 12-33**)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to transmit respective data of the capacity variation and of the inductance variation in the form of signals by means of radio waves to a receiver connected to a computer as taught by Cook in the invention by Reinbold, as modified by French. The motivation for the combination is to "better identify the effects of the punches received" (**Column 6, lines 36-46**).

Considering **claim 20**, the invention by Reinbold, as modified by French, fails to disclose that the blows are struck in a combative sport and the computer processes said data to produce information of assisting refereeing of the combative sport

13. However, Cook teaches that the blows are struck in a combative sport and the computer processes said data to produce information of assisting refereeing of the combative sport (**Column 6, lines 12-46**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a computer to processes said data to produce information for assisting refereeing of the combative sport as taught by Cook in the invention by Reinbold, as modified by French. The motivation for the combination is to allow a match to be scored automatically as disclosed by Cook (**Column 6, lines 36-46**).

Considering **claim 21**, Reinbold discloses that the device is used in a combative sport (**Column 10, lines 26-32**).

The invention by Reinbold fails to disclose that the combative sport is taekwondo.  
14. However, French teaches that the combative sport is taekwondo (**Column 1, lines 15-33**).

Therefore, it would have been obvious to utilize the device in the sport of taekwondo because it is well known in the art that scoring of taekwondo matches is extremely difficult.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1 and 18 have been considered but are moot in view of the new ground(s) of rejection.

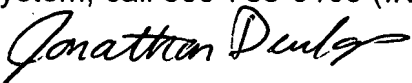
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Dunlap whose telephone number is (571) 270-1335. The examiner can normally be reached on M-F 8-5 with every other Friday off.

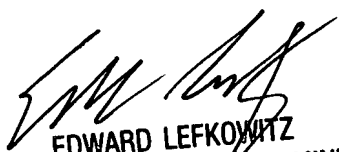
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2855

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jonathan Dunlap  
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October 13, 2007



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